CLCS REDSTONE Delivery
LCC-X Demonstration Plan
Prototype Console Evaluation "OMI"

LCC-X INTRODUCTION

The LCC-X HCI Testbed will be upgraded for the REDSTONE CLCS delivery. The JUNO Consoles (Clunker and Slick) will be removed and will be replaced with three Prototype SE Console Enclosures. Most of the computer equipment and other hardware from Clunker and Slick will be re-used in the prototype consoles. For the CLCS REDSTONE Delivery, the LCC-X HCI Testbed area will include the following equipment:

- Three Prototype System Engineering Console Positions, whose design reflects the Prototype Console Enclosure Design Panel II, stuffed with workstations and other equipment
- Two Prototype Console Support Modules, stuffed with workstations and other equipment
- The CLCS 3D Visualization workstation (SGI Onyx), housed on a separate workstation table

The three Prototype System Engineering Console Enclosures and the two Prototype Console Support Module Enclosures will be produced by different vendors.

It should be noted that the SE Console Positions and the Console Support Modules will be arranged in a manner consistent with the leading OCR layout concept. The Prototype Consoles and their associated task chairs will reflect the updated color scheme(s) selected by JUNO LCC-X user evaluations.

The Console Support Modules will be utilized to demonstrate the REDSTONE **'Robust Web Interface Thread'** , the **'SIM Gateway Thread'** and the **'HMF Software Pathfinder Thread'**. The Support Modules, workstations and network connectivity to perform these demonstrations will be available to support the STS-86 launch.

In addition to the Prototype Console Evaluation OMI that will be described below, the Prototype SE Console Enclosures will be used to demonstrate the **'Super Light Weight Tank Thread',** the **'GSE Commanding Thread'** and the **'Ice Team'** displays, even if the IDE is being utilized for integration and testing activities. The Prototype SE Consoles, their workstations and network connectivity to perform these demonstrations will be available to support the STS-86 launch, but the GSE Commanding Thread may not be demonstrated initially due to allocation of the IDE for CSCI Integration & Test (CIT) testing.

LCC-X PROTOTYPE CONSOLE INTRODUCTION

A total of three SE Console Positions and two Console Support Modules will be installed in LCC-X for the REDSTONE delivery. One SE Console Position will be provided by ~~Evans Consoles, of Calgary, Alberta~~; one SE Console Position and one Console Support Module will be provided by Infra-Structures, of Brentwood, NY, and one SE Console Position and one Console Support Module will be assembled 'in-house'.

All of the SE Console Positions and Console Support Modules will be 'stuffed' with workstations and other equipment, to provide a high-fidelity user evaluation.

During the three week period that begins immediately after the STS-86 launch (tentatively scheduled for September 18th), the Prototype System Engineering Consoles will be evaluated by a NASA/USA team for functionality, aesthetics, placement of equipment and other factors. A thorough evaluation by this team is essential to determine both the console enclosure acquisition strategy as well as any adjustments required to the specification for the Production Consoles.

The equipment complement of the various LCC-X Console Positions is provided below. "Planetary" names are used to identify each Prototype Console Position and Support Module.

SE Console Position "Mars" [~~Evans,~~ Vendor TBD]

- **SGI O2 Command and Control Workstation**, with two 20" CRT Monitors
- **Gateway P6/200 BIN Workstation**, with one 21" CRT Monitor
- **Virtual PFP**, located as a window on the secondary C&C Workstation monitor
- **20" CRT Monitor for viewing OTV** (located at far left of console position)
- **Barco Vivaldi OTV Controller** (drives a monitor with 'windowed' video views)
- **Safing Panel** (located at far right of console position)
- **OIS-D 52D EI** (located at far right of console position)
- **"PCC Style" Telephone** (mounted at far right of console position))

Other Unique Items
Ergonomic KB for BIN workstation (like Jan's)
~~"Cockpit" orientation of monitors~~
~~Keyboard stowage buried inside desktop~~

SE Console Position "Neptune" [Infra-Structure]

- **SGI O2 Command and Control Workstation**, with two 20" CRT Monitors
- **Gateway P6/200 BIN Workstation**, with one 21" CRT Monitor
- **Command Panel**, to provide "PFP Functionality" (located at far left of console position)
- **Legacy 9" OTV Monitors** (located in center of console position)
- **Legacy OTV Controller** (located at far right of console position)
- **Safing Panel** (located at far right of console position)
- **OIS-D 51D EI** (located at far left of console position)
- **"PCC Style" Telephone** (mounted in wedge between console positions)

Other Unique Items
Motorized tabletop height adjustment
Wireless KB/Mouse for BIN workstation
Keyboard stowage behind desktop

SE Console Position "Venus" [In-House Assembly]

- **SGI O2 Command and Control Workstation**, with two 20" LCD Flat Screens
- **DEC NT AlphaStation BIN Workstation,** with two 20" LCD Flat Screens
- **Command Panel**, to provide "PFP Functionality" (located in center of console position)
- **OTV Functionality provided by BIN Workstation**
- **Safing Panel** (located in center of console position)
- **OIS-D 52D EI** (located in center of console position)
- **"PCC Style" Telephone** (mounted in center of console positions)

Other Unique Items
Secondary, elevated desktop for binders
KB Stowage underneath elevated desktop
Portable Rollaround Storage Unit in 'Wedge'
Monitor and workstation storage capability in 'Wedge'

Console Support Module "Jupiter" [Infra-Structure]

- **DEC Pentium BIN Workstation,** with one 21" CRT Monitor
- **Gateway Notebook Computer**
  OR
  Gateway P6/200 BIN Workstation, with one 21" CRT Monitor
- **HP Color LaserJet5 Printer**
- **"Port Panel"**, to select between DCN and BIN connectivity
- **"SSPF Style" Telephone** (located on desktop)

Console Support Module "Saturn" [In-House Assembly]

- **SGI O2 Command and Control Workstation,** with one 20" LCD Flat Screen
- **Gateway P6/200 BIN Workstation**, with one 20" LCD Flat Screen
- **HP LaserJet5M Printer**
- **"Port Panel"**, to select between DCN and BIN connectivity
- **"SSPF Style" Telephone** (located on desktop)

PROTOTYPE CONSOLE EVALUATION "OMI" OVERVIEW

The Prototype Console Evaluation "OMI" will contain various 'chapters', as listed below:

1. 'Fluids' SE Console Position Evaluation
2. 'Data Processing' SE Console Position Evaluation
3. 'Electrical' SE Console Position Evaluation
4. 'Ground Systems' SE Console Position Evaluation
5. 'Maintenance and Repair' SE Console Position Evaluation

The first four chapters are required because each of those disciplines uses the console in a distinct manner that is different from the other three. Included in those chapters are scenarios of one person operating a console, two people operating a console, and a 'wolfpack' of people operating multiple console positions in support of a single test. Existing LPS users will be heavily involved in these evaluations.

The 'Maintenance and Repair' chapter will evaluate the ease of replacing LRUs in the consoles. It is likely that the LPS O&M organization will be heavily involved in this evaluation.

PROTOTYPE CONSOLE EVALUATION "OMI" OUTLINE

The first four chapters will include variations and iterations of the following:

"Login" on the (pre-loaded) BIN WS
On the BIN WS, bring up the on-line "OMI", which then addresses the following steps, in no particular order:
- Sign-On Process
- "Login" on the (pre-loaded) Command and Control WS
- View multiple displays on the C&C WS
- Use of both 'heads' of the C&C WS
- Exercise the provided PFP functionality
- Exercise the provided OTV functionality
- Exercise the OIS-D End Instrument to evaluate its placement, and the placement of its headset jacks
- Exercise the Safing Panel to evaluate its placement

PROTOTYPE CONSOLE EVALUATION "OMI" OUTLINE (continued)

Exercise the various keyboard and pointing device configurations provided
Evaluate different options of window/background colors and fonts
Utilize multiple 3" binders in conjunction with console operations
Utilize telephone to evaluate its placement
Exercise other functionality on the BIN WS (web, e-mail MS office, etc..)
Evaluate Task Lighting, Chair Adjustments and Storage Space Provided
Sign-Off Process

On the BIN WS, bring up the on-line evaluation form to provide feedback
Log out of the BIN WS

The fifth chapter will include variations and iterations of the following for all console positions and support modules, in no particular order:

Remove and replace the C&C Workstation
Remove and replace the C&C Workstation Monitors
Remove and replace the BIN Workstation
Remove and replace the BIN Workstation Monitors
Remove and replace the OTV Functionality Provided
Remove and replace the Power Distribution Panel/Chassis
Remove and replace the Safing Panel
Remove and replace the OIS-D End Instrument
Remove and replace the Command Panel, if present
"Login" on the (pre-loaded) BIN WS
On the BIN WS, bring up the on-line evaluation form to provide feedback
Log out of the BIN WS